

MIL-W-16878/6B(NAVY)
 10 August 1981
 SUPERSEDING
 MIL-W-16878/6A(NAVY)(IN PART)
 5 July 1961
 (See supersession data herein)

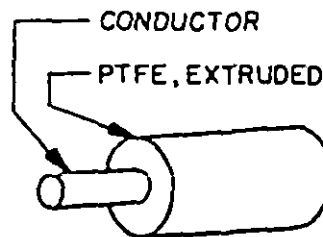
MILITARY SPECIFICATION SHEET

WIRE, ELECTRICAL, POLYTETRAFLUOROETHYLENE

(PTFE) INSULATED, 200°C, 250 VOLTS, EXTRUDED INSULATION

This specification sheet is approved for use by the Naval Sea Systems Command, Department of the Navy, and is available for use by all Departments and Agencies of the Department of Defense.

The complete requirements for acquiring the wire described herein shall consist of this document and the latest issue of MIL-W-16878.



SH 11875

FIGURE 1. Construction.

TABLE I. Construction details.

Wire size	Stranding	Conductor		Conductor diameter (nominal) (inch)	Finished wire	
		Material <u>2/</u> <u>3/</u>	Coating		Diameter (inch)	
					Min	Max
32	7 X 40	Copper	Silver	0.010	0.020	0.024
32	7 X 40	H.S.C.A.	Silver	.010	.020	.024
32	7 X 40	C.C. Steel	Silver	.010	.020	.024
30	1 X 30	Copper	Silver	.0100	.020	.024
30	1 X 30	H.S.C.A.	Silver	.0100	.020	.024
30	1 X 30	C.C. Steel	Silver	.0100	.020	.024

See footnotes at end of table

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TABLE I. Construction details. - Continued

Wire size	Stranding	Conductor		Conductor diameter (nominal) (inch)	Finished wire	
		Material 2/ 3/	Coating		Diameter (inch)	
					Min	Max
30	7 X 38	Copper	Silver	0.012	0.022	0.026
30	7 X 38	H.S.C.A.	Silver	.012	.022	.026
28	1 X 28	Copper	Silver	.0126	.023	.027
28	1 X 28	H.S.C.A.	Silver	.0126	.023	.027
28	1 X 28	C.C. Steel	Silver	.0126	.023	.027
28	7 X 36	Copper	Silver	.015	.025	.029
28	7 X 36	H.S.C.A.	Silver	.015	.025	.029
26	1 X 26	Copper	Silver	.0159	.026	.030
26	1 X 26	H.S.C.A.	Silver	.0159	.026	.030
26	1 X 26	C.C. Steel	Silver	.0159	.026	.030
26	7 X 34	Copper	Silver	.019	.029	.033
26	7 X 34	H.S.C.A.	Silver	.019	.029	.033
26	19 X 38	Copper	Silver	.020	.029	.033
26	19 X 38	H.S.C.A.	Silver	.020	.029	.033
24	1 X 24	Copper	Silver	.0201	.030	.034
24	1 X 24	H.S.C.A.	Silver	.0201	.030	.034
24	1 X 24	C.C. Steel	Silver	.0201	.030	.034
24	7 X 32	Copper	Silver	.024	.034	.038
24	7 X 32	H.S.C.A.	Silver	.024	.034	.038
24	19 X 36	Copper	Silver	.025	.034	.038
24	19 X 36	H.S.C.A.	Silver	.025	.034	.038
22	1 X 22	Copper	Silver	.0254	.035	.040
22	1 X 22	H.S.C.A.	Silver	.0254	.035	.040
22	1 X 22	C.C. Steel	Silver	.0254	.035	.040
22	7 X 30	Copper	Silver	.030	.040	.044
22	7 X 30	H.S.C.A.	Silver	.030	.040	.044
22	19 X 34	Copper	Silver	.032	.040	.044
22	19 X 34	H.S.C.A.	Silver	.032	.040	.044
20	1 X 20	Copper	Silver	.0320	.042	.046
20	1 X 20	H.S.C.A.	Silver	.0320	.042	.046
20	7 X 28	Copper	Silver	.038	.048	.052
20	7 X 28	H.S.C.A.	Silver	.038	.048	.052
20	19 X 32	Copper	Silver	.040	.048	.052
20	19 X 32	H.S.C.A.	Silver	.040	.048	.052

1/ Inactive for new design.

2/ H.S.C.A. stands for high strength copper alloy.

3/ C.C. Steel stands for copper clad steel

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REQUIREMENTS:

Visual and mechanical inspection: Applicable.
 Spark test: 2.5 kilovolts (kV).
 Impulse dielectric test: 4.0 kV.
 Tank test: 1.5 kV.
 Dielectric withstanding voltage: 1.5 kV.
 Insulation resistance: $IR = K \log_{10} D/d$

Where: IR = Minimum insulation resistance in megohms per 1000 feet at 20°C.

K = 50,000

D = Maximum average diameter of finished wire

d = Conductor diameter

Cold bend: Condition 4 hours at minus 65°C \pm 1°C (see table II).

TABLE II. Cold bend mandrel sizes.

Wire size	Cold bend mandrel (maximum diameter) (inches)
32 through 20	1

Concentricity: 70 percent (minimum).
 Surface resistance: 5 megohms (minimum).
 Wrap back: Applicable.
 Heat resistance: Condition at 290°C.
 Flammability: Not applicable
 Soldering: Applicable.
 Heating aging: Not applicable.
 Insulation tensile strength: 3000 pounds force per square inch (minimum).
 Insulation elongation: 150 percent (minimum).
 Stripe durability: Applicable.
 Fungus resistance: Applicable.
 Maximum direct current resistance of finished wire: See table I of MIL-W-16878.

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TABLE III. Put-up tabulation. 1/

AWG size	Percentage of order	Length (ft) one continuous length	Max. no. of lengths (per spool or reel)	
			500 ft	1000 ft
32 to 22	25	Under 75	4	6
	25	75 - 300		
	50	301 or more		
20 to 16	Unacceptable	Under 75	5	7
	20	75 - 100		
	50	101 - 300		
14 to 10	30	301 or more	5	6
	Unacceptable	Under 50		
	40	50 - 100		
	50	101 - 300		
	10	301 or more		

1/ Each spool or reel shall be marked accordingly with the length in feet and location of each piece.

Military part number (see MIL-W-16878):

	<u>M16878/</u>	<u>6</u>	<u>B</u>	<u>C</u>	<u>B</u>	<u>905</u>
Military designation						
Specification sheet						
		Conductor material	Conductor size	Conductor stranding	Color code	

Supersession data: The wire covered by this specification sheet supersedes MIL-W-16878/6A(NAVY), type ET, 200°C rated, extruded without jacket.

Review activities:
Navy - AS, EC

Preparing activity:
Navy - SH
(Project 6145-N300-5)

User activities:
Navy -OS, MC

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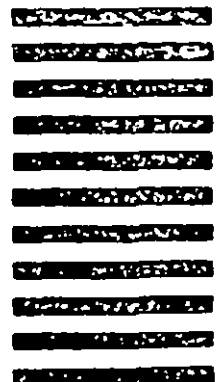
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